

D. G. Brinton, M. D., of Philadelphia.

A. D. White, President Cornell University, Ithaca, N. Y.

J. H. C. Coffin, U. S. N., Supt. Naut. Almanac, Washington, D. C.

Joseph Wharton, of Philadelphia.

And the Society was adjourned.

*Stated Meeting, May 7, 1869.*

Present, nine members.

JOHN C. CRESSON, Vice-President, in the Chair.

Dr. Brinton was introduced to the presiding officer, and took his seat.

Letters accepting membership were received from J. H. C. Coffin, dated Nautical Almanac Office, Washington, April 21, 1869; D. G. Brinton, dated 1001 North Sixth street, Philadelphia, April 19, 1869; A. Carlier, dated 6 rue de Milan, Paris, Avril 19, 1869, and D. White, dated Cornell University, Ithaca, N. Y., May 1.

Donations for the Library were received from the Royal Academies and Societies at St. Petersburg, Berlin, Copenhagen, Göttingen, Munich, and Dublin; the Societies of Science at Offenbach, Frankfort, Bordeaux, Manchester and Leeds; the Geological Societies at Vienna, and Geographical Societies at London and Paris, the Zoological Botanical Society at Vienna, the London Astronomical, Chemical, Meteorological and Asiatic Societies, the Boston Natural Historical Society and Wool Manufacturers Association, the American Pharmaceutical Society, Academy of Natural Sciences, Franklin Institute, House of Refuge, Deaf and Dumb Institute, Dr. C. D. Meigs, the United States Sanitary Commission, the Congressional Library, and Mr. T. B. Brooks, Civil Engineer at Negaunee, Michigan.

Dr. Hayden presented, for publication in the Transactions, an Appendix to his report of the Geology on the Yellow and Missouri Rivers, under the superintendence of Captain Ray-

nolds, said Appendix consisting of a sub-report on the Carices of the Expedition made by the late Dr. Dewey. On motion, the Memoir (with its five plates) was referred to a Committee consisting of Mr. Durand, Mr. James, and Dr. Ruschenberger.

Mr. Rothwell, Engineer of Mines, exhibited through the Secretary a published copy of his new map of the eastern end of the first Anthracite Coal Basin, with cross sections, showing the excessive plication of the synclinal. (See Plate 2, fig. 2.)

Mr. Chase communicated by permission of Mr. Pierce, Director of the U. S. Coast Survey, the more recent results of his investigations into the rain gauge curves.

The observations which were examined, and the method of treatment, were described in my discussion of the tidal rain-fall of Philadelphia, (*ante*, vol. x., pp. 523-7).

The frequent tendency to triple maxima and minima, which I have attributed to lunar influence on the daily barometric spheroid,—the establishments, both of temperature, and of position with reference to great bodies of water,—the different relations of precipitation to atmospheric pressure at different seasons of the year,—the influence of the moon and of each of the principal planets on temperature, winds, cloudiness, and both frequency and amount of rain-fall,—the probability that the influences upon temperature are due to the induced aerial currents and not to radiation, (a South wind raising, and a North wind depressing the thermometer),—the secular variation, which appears to depend principally upon the combined action of the Moon and Jupiter,—are all clearly indicated by the normal curves.

Most of the curves show a great similarity at the opposite equinoxes, and a great contrast at the opposite solstices, both at Greenwich and at Philadelphia. But in the total rain-fall at different solar hours, the equinoctial and solstitial contrast is modified by a synchronous divergence at the two stations, the Philadelphia curves differing greatly at the equinoxes and being nearly alike at the solstices. This peculiarity may be owing to the fact that the prevailing winds at Greenwich are from the ocean, while those at Philadelphia are from the land, so that an atmosphere saturated with moisture is normal at the former station, abnormal at the latter.

The planetary curves are so strongly marked that it seems impossible to account for them by any action analogous to the Moon's differential attraction. They may perhaps be satisfactorily explained by the moment of inertia, and the constantly and often rapidly varying distance of the centre of gravity of the earth and disturbing planet.

Dr. Brinton communicated the information which he had obtained respecting the valuable Arawak MSS. Grammar and

Vocabulary by Shultz, in the library of this Society, and the desirableness of publishing a discussion of their relations to other MSS. existing in Europe. It appears that the language which Columbus reported to be common to all the larger islands of the W. Indies was neither Carib, nor Maya, but genuine Arawak, scarcely differing from that now spoken between the Amazon and Orinoco, not more than Chaucer's English from the English of to-day. It is an added proof that the whole fauna (man included) of the islands outside the Gulf Stream came from the Spanish Main, the movement being in the opposite direction to that of the fauna of N. America which terminated its course in Florida.

A letter and enclosed testimonial note of the proceedings of the Michaux Legacy were read, from M. Carlier, announcing the final settlement of the legacy at Paris and in Pontoise; and on motion of Mr. Chase, these documents were referred to the Committee on the Michaux Legacy with instructions to prepare the needful papers, and procure the signature of the President of this Society, and to remit funds for the expenses incurred; and they are hereby authorized to draw upon the Treasurer of the Society for the necessary amount.

A communication from the Janitor was referred to the Committee on the Hall. And the Society was adjourned.

---

*Stated Meeting, May 21, 1869.*

Present, seventeen members.

MR. FRALEY, Vice-President, in the Chair.

Mr. Wharton was introduced to the presiding officer, and took his seat.

A letter returning thanks for election to membership, was received from the President of the United States, dated Executive Mansion, April 24, 1869.

A letter acknowledging the receipt of a set of the Society's